REMARKS

This Amendment and Response is submitted in reply to the Office Action dated April 17, 2008, in which the Examiner re-opened prosecution following Applicants' appeal and:

objected to the Specification;

rejected claims 4-6 under 35 U.S.C. § 112, second paragraph, as indefinite; and

rejected claims 1-10 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,987,770 to Yonge, III in view of U.S. Patent Application Publication No. 2003/0079000 to Chamberlain.

Applicants respectfully address and/or traverse the objection and rejections below. Claims 1-10 are currently pending. The current Amendment amends claim 2, cancels claim 6 and adds new claims 11 and 12, leaving claims 1-5 and 7-12 pending upon entrance of the current Amendment.

The Examiner objected to the Specification based on the incorporation by reference of the HomePlug 1.0.1 Specification. In connection with this objection, the Examiner raises two issues:

1) that Applicants allegedly neglected to submit a copy of the reference; and

2) that non-patent literature NPL cannot be incorporated by reference.

Regarding 1), Applicants are unclear whether a copy of the HomePlug 1.0.1 Specification was previously submitted. To eliminate any uncertainty, a copy of the HomePlug 1.0.1 Specification is submitted herewith, consisting of the same material incorporated by reference in the current application.

Regarding 2), Applicants respectfully disagree and note that 37 C.F.R. § 1.57(d) expressly states that:

> Other material ("Nonessential material") may be incorporated by reference to U.S. patents, U.S. patent application publications, foreign patents, foreign published applications, prior and concurrently filed commonly owned U.S. applications, *or non-patent publications*. (37 C.F.R. § 1.57(d); *emphasis added*).

Thus, § 1.57(d) expressly permits the incorporation by reference of NPL. Applicants respectfully submit that the prohibition against incorporation by reference of NPL extends only to "essential material" (see 37 C.F.R. § 1.57(c)).

Since Applicants have submitted a copy of the incorporated subject matter and since incorporation by reference of NPL is expressly permitted, Applicants respectfully request that the objection to the Specification be withdrawn.

The Examiner rejected claims 4-6 under 35 U.S.C. § 112, second paragraph, as indefinite. Claim 6 has been cancelled, rendering this rejection moot. Claims 4 and 5 were rejected based on the recitation of "the local NEK" lacking antecedent basis. Applicants thank the Examiner for bringing this their attention. Claim 2, from which

claims 4 and 5 depend, has been amended to recite "a local *NEK*." Accordingly, Applicants respectfully request that the rejection of claims 4-6 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The Examiner rejected claim 1 under 35 U.S.C. § 103(a) as unpatentable over Yonge in view of Chamberlain. A rejection under § 103 is improper unless there is a valid reason why it would be obvious to one of ordinary skill in the art to modify the teachings of one or more prior art references to teach or suggest the claim invention.

Applicants' claim 1 recites a method for determining MAC address for a remote device having a known, unique DEK in a network where devices may not send a confirmation to a *SetNEK* request, the method comprising the steps of:

preparing a broadcast message with a *SetNEK* request containing a unique, temporary *NEK*;

encrypting the message with the DEK of the remote device;

transmitting the broadcast message on a network medium;

confirming receipt of the temporary *NEK* by sending a request that requires a response from the remote device which is encrypted with the temporary *NEK*; and

determining the MAC address of the remote device from the response.

Neither Yonge nor Chamberlain teaches or suggests this method. Instead, both Yonge and Chamberlain substantially teach transmission of the local *NEK* to a new

device using "Procedure A", as described in the "BACKGROUND" section of Applicants' Specification. To make this clear, and highlight the distinctions between the teachings of Yonge and Chamberlain relative to Applicants' claim 1, Applicants believe that the following considerations may be useful.

To add a new device part of a logical network, the new device must receive the local *NEK* (network encryption key) for the logical network. The local *NEK* may be selected essentially at random from all possible *NEK*s, but the local *NEK* is not unique or temporary – it is the *NEK* that is used to encrypt messages between all devices on that logical network. That the local *NEK* may have initially been chosen at random from a large number of possible *NEK*s is irrelevant to the fact that the local *NEK* is not a unique, temporary *NEK*, as recited by Applicants' claim 1.

Col. 34, lines 1-10 of Yonge, some of which is referenced by the Examiner in support of the contention that Yonge implicity discloses a unique, temporary *NEK* (see, April 17, 2008 Office Action, bottom of p. 5 to top of 6), actually establishes just the opposite. Backing up for context to col. 33, line 63, Yonge states:

> ...the stations in the logical network **580**, that is, stations **12***a*, **12***b*, and **12***e*) each store in the respective encryption key stores **344** a respective unique default key **600***a*, **600***b*, **600***e* (to be used for re-key operations only), as well as an identical network encryption key (NEK) **602** and an associated encryption key select (EKS) **604** to be used for *all other transactions within the logical network* **580**). (Yonge, col. 33, line 63 – col. 34, line 3; emphasis added.)

Thus, Yonge is effectively reiterating Applicants' definition of a local *NEK* – which is

distinct from Applicants' claim 1 recitation of a unique, temporary *NEK*. This definition of a local *NEK* is also reiterated by Chamberlain (see, e.g., paragraph [0038]).

In addition to any local *NEK*s for logical networks to which a device may belong, the device also stores a *DEK* (device encryption key) that is unique to that device – which the Examiner correctly compares to the "default key" disclosed by Yonge. The *DEK* uniquely identifies that device, but is not temporary. For example, as the above citation from Yonge discloses, it may be used repeatedly for re-keying operations.

The "one-time" encryption key of Chamberlain is also analogous to a *DEK*. This is made clear in paragraphs [0049] and [0050]. Chamberlain's "one-time" key is unique to a particular device, but it is not temporary – it is permanently associated with the device. As Chamberlain expressly states:

> Of course, it will be understood that the key can be used any number of times, should the device later be reconfigured into a different logical network. (Chamberlain, paragraph [0050].)

A network device (at least, most modern devices) also has a unique hardware identifier, known as a MAC address. Like the *DEK*, the MAC address is unique to the device, but unlike the *DEK*, the MAC address is not an encryption key. In connection with MAC addresses, the Examiner states that:

> ...it is common knowledge to a person with ordinary skill in the art that the physical address (i.e. MAC address) of the remote device must be determined before the sender (i.e. NCA) is able to send information (i.e. the network encryption key) to the device. (April 17, 2008 Office Action, p. 8.)

This contention is inaccurate. It is not necessary to know the MAC address of a device to send a broadcast message over a network. Any device connected to the network can pick up such a message (although if the message is encrypted its contents will only be decipherable to devices having the appropriate encryption key). A MAC address is required to if it is desired to transmit *exclusively* to a particular device. Thus, if a device's MAC address is not known, a unicast message cannot be successfully transmitted.

The Examiner references step 618 of Chamberlain's Figure 6 in connection with Applicants' claim 1 recitation of determining the MAC address of the remote device from the response (April 17, 2008 Office Action, p. 8). However, step 618 does not involve determination of a MAC address based on a response. Chamberlain's NCA (network configuration apparatus) is generating a *new* physical (logical) address for the device in step 618 (see, e.g., Chamberlain, paragraph [0058]), apparently based on the assumption that the device does not already have one.

Chamberlain's paragraph [0060], extensively quoted by the Examiner, is essentially a clarification of this point. Chamberlain states:

> Applicant acknowledges that many of the hardware devices designed to operate over these media, especially those designed to operate over wireless media, have hardware identifiers (or addresses) pre-assigned to them by manufacturers. Unique hardware addresses are pre-assigned based on the various communication protocols used by the devices. In these cases where the devices already have preassigned hardware devices, *the NCA need not necessarily assign a logical address* using the techniques described above. (Chamberlain,

paragraph [0060]; *emphasis added*.)

Thus, Chamberlain acknowledges that step 618 is *unnecessary* in the case of a device having a hardware address.

In summary, notwithstanding various aspects unrelated to Applicants' claim 1, both Yonge and Chamberlain both teach the conventional method of secure local *NEK* transmission to a remote device – the local *NEK* is transmitted in a message encrypted with the device *DEK*. As noted by Applicants (see Specification, paragraphs [0018] and [0019]), this method can be problematic where a device is not configured to execute a *ConfirmNEK* request. Therefore, Applicants have found it advantageous to determine the MAC address of the device prior to sending the local *NEK*, and do so according to the method of claim 1.

Yonge and Chamberlain are aware of the existence of MAC addresses, and may even disclose that the MAC address can be determined. However, that is irrelevant to the § 103 rejection of Applicants' claim 1, because neither Yonge nor Chamberlain teaches or suggests that a unique, temporary *NEK* is first sent to the device, nor that the MAC address is then determined from a response to a message encrypted with that unique, temporary *NEK*. Moreover, there is no reason, either in the references themselves, or in the knowledge of one of ordinary skill in the art, to modify Yonge or Chamberlain to determine a MAC address using a unique, temporary *NEK*.

Accordingly, Applicants respectfully submit that the rejection of claim 1 under 35

U.S.C. § 103(a) as unpatentable over Yonge in view of Chamberlain is improper for at least these reasons, and should be withdrawn.

Claims 2-10 were also rejected under 35 U.S.C. § 103(a) as unpatentable over Yonge in view of Chamberlain. These claims all depend, directly or indirectly, from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2-10 under 35 U.S.C. § 103(a) as unpatentable over Yonge in view of Chamberlain is improper for at least the reasons stated in connection with claim 1, and should be withdrawn.

The differences discussed above in connection with claim 1, are particularly highlighted in Applicants' new claim 11, and its dependent claim 12. Accordingly, Applicants submit that these new claims would not properly be rejected under 35 U.S.C. § 103(a) as unpatentable over Yonge in view of Chamberlain.

Having addressed and/or traversed each and every objection and claim rejection, Applicants respectfully request that the objection to the Specification, and the rejections of claims 1-10 be withdrawn, and claims 1-5 and 7-12 be passed to issue.

Applicants respectfully submit that nothing in the current Amendment constitutes

new matter. The amended and new claims are fully supported by the disclosure of the application, as filed.

Beyond the extension of time fees submitted herewith, Applicants believe no additional fees are due in connection with this Amendment and Response. If any additional fees are deemed necessary, authorization is hereby granted to charge any such fees to Deposit Account No. 01-0484.

Respectfully submitted,

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